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ference proved to be a permanent one, and not a variation caused by accident or error in technique, it was deemed worthy of being placed on record.

A large number of corpuscles were measured, but only the extremes and averages are here presented. They are as follows:

Shortest width observed	3.9 microns.
Greatest width observed	4.8 microns.
Shortest length observed	8.5 microns.
Greatest length observed	10.7 microns.
Average length	10.3 microns.
Average width	4.1 microns.
Ratio of width to length	1:2.5.
Average thickness	2 microns.

Thus it is seen that the outline was distinctly elliptical, the long diameter being on the average two and a half times the shorter diameter. It is also to be observed that the above figures differ considerably from those of the normal red corpuscles, which vary from 7.2 microns to 7.8 microns. The thickness was practically the same as that of the normal red corpuscles. The number was five millions per cubic millimeter and the quantity of hæmoglobin was up to the standard. The colorless corpuscles presented no peculiarities.

The student in whose blood these corpuscles were found was a healthy mulatto about twenty-two years of age. His brother, who attended the university a few years ago, had normal red blood cells. Other than this no family history is at hand.

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NOTES ON ENTOMOLOGY.

AUGUSTE BARBEY, an expert Swiss forester, has published a review of the Scolytidæ of central Europe.* They are treated from a systematic standpoint, but after the description of each species there is usually a considerable amount of biological matter. With each species of great destructive power is given the best means of combating it. A number of the European species also occur in the United States, so that the book will be of great value to all American students of forest insects. The excellent plates illustrate the

* 'Les Scolytides de l'Europe Centrale,' Geneva, folio, 120 pp., 18 plates (also a German edition).

insects and their work; several of the latter are particularly fine.

The Münchener Koleopterologische Zeitschrift is a new entomological journal, devoted to the study of palæarctic beetles. It is issued from Munich, and edited by Drs. Karl and Joseph Daniel. Volume I. (1903) is now complete and contains over 400 pages. A large majority of the articles are systematic, and consist of reviews and revisions of genera and groups, and descriptions of new species and varieties. This volume contains Dr. Ganglbauer's notable classification of the coleoptera. He criticizes the recent classifications of Lameere and Kolbe, and presents a new one, which, in general, is like that of LeConte and Horn (1883). There are seven leading groups of families, but the groups Clavicornia and Serricornia of those authors are arranged under the groups Staphylinoidea and Diversicornia. It would appear, however, even from the names of some of the groups, that a logical classification of the beetles is a thing only to be hoped for.

The British Museum of Natural History has issued an elaborate account of the African tse-tse flies, prepared by Mr. E. E. Austen.* The fact that one species (*G. morsitans*) carries the germs of the Nagana disease lends great interest to the study of these flies. This disease, so fatal to domestic animals, was supposed to be due to a poison injected by the bite of the tse-tse fly. All travelers in those regions have been delayed or disheartened by its ravages in their animals. And Mr. Austen suggests that were it not for the tse-tse fly, the entire history of South Africa would have been different. Although as long ago as 1879 it was suspected that the tse-tse fly was merely the carrier of a blood-parasite, it was not so proved until 1895 by Col. Bruce. This parasite was then described by Plimmer and Bradford as *Trypanosoma brucei*. Mr. Austen devotes many pages to the recital of the ravages of the disease, quoting from many works of travel. Detailed technical descriptions are given of the seven species of the genus, one of

* 'A Monograph of the Tse-tse Flies (*Glossina*),' with a chapter on the mouthparts, by H. J. Hansen, London, 1903, pp. 319, 9 pls.

which is new. The beautiful plates illustrate the species. Dr. Hansen has described the mouth-parts and compared them to the allied genus, *Stomoxys*, the stable-fly of this country and Europe. A map is given showing the known distribution of *Glossina* in Africa.

It may be added that Lieut. Col. Bruce, who worked out the life history of the trypanosome of Nagana, has lately discovered that another species of tse-tse fly, *G. palpalis*, is the carrier of the trypanosome of sleeping sickness.

Dr. Adolph Lutz has published an account of the life history of an injurious Brazilian *Anopheles*.^{*} This mosquito, which is the carrier of the germ of an intermittent fever, is a small species of *Anopheles*, *A. lutzii* Theobald. In the locality where the sickness occurred there are very few pools of stagnant water. Dr. Lutz, therefore, sought for other breeding places, and found the larva of this species in the cavities of various epiphytic plants of the family Bromeliaceæ. He also found the larva of a *Megarhinus* feeding upon the other culicid larvæ. Two species of *Culex* were also bred from the water in the cavities of these plants. The article shows the difficulty in the tropics of localizing the breeding places of mosquitoes.

Mr. C. T. Brues has added considerably to our limited knowledge of the Stylopidae.† From Texan species of *Polistes* which he kept in confinement he obtained females and bred males of two new species of *Xenos* (*X. pallidus* and *X. nigrescens*). Upon these, and a large series of *X. pecki* collected in Connecticut by Dr. Wheeler, Mr. Brues has made a study, principally of the early stages of the embryo and the origin of the eggs. He finds no similarity between the Stylopidae and the Coleoptera, and concludes that the former should form a separate order of insects—the Strepsiptera.

The second volume of Bingham's 'Hymen-

^{*} 'Waldmosquitos und Waldmalaria,' *Centralbl. f. Bakter. Parasitenk. u. Infektionskrankheiten*, Bd. XXXIII., pp. 282-292, 1903, figs.

† 'A Contribution to our knowledge of the Stylopidae,' *Zool. Jahrb., Abt. f. Anat.*, Vol. XVIII., pp. 241-270, 1903.

optera of British India'* contains the ants and cuckoo (or golden) wasps. There are 398 species of ants described, representing probably one of the largest ant-faunas in the world. There are many notes of a very interesting nature on the habits of some of the ants. Of the cuckoo-wasps (Chrysididae) 79 species are described. The colored plate shows some of these handsome insects.

Dr. J. Vosseler has given an attractive account of his studies on the Orthoptera of Algeria and Tunis.† The first part contains notes on the physical condition of the country, the rôle of wind in the distribution of the forms, and an annotated catalogue of the species (224 in number). Part second has a chapter on the distribution of these species in the Mediterranean fauna, one on the markings and adaptive appearances in Acridiidae, notes on the squirting of blood by various species, and on the odor-glands in one genus—*Edaleus*.

The squirting of blood, or the body-fluid, is considered as a means of defense. In *Eugaster* there is a hole in the legs near the coxa through which the blood is forced; in *Platystolus* there is a slit at the posterior part of the pronotum. Many of the species are confined to desert regions, and of these a number are protectively colored when at rest, yet when flying display the brilliant colors on their hind wings. Some of the species vary considerably, and one colored plate is devoted to the variations in *Eremobia crista* Fabr.

Dr. C. G. Attems has published a synopsis of the geophilid myriapods of the world.‡ It consists of a chapter on the structure of the family, a synopsis to genera and species of the palæarctic forms, a catalogue of the species of other countries, and descriptions of many new species, mostly non-European. Altogether about 290 species are mentioned.

* 'The Fauna of British India, including Ceylon and Burma; Hymenoptera,' Vol. II., London, 1903, 506 pp., 1 pl., 161 figs.

† 'Beiträge zur Faunistik und Biologie der Orthopteren Algeriens und Tunesiens,' *Zool. Jahrb., Abt. f. Syst.*, Vol. XVI., pp. 338-404, 2 pls.; Vol. XVII., pp. 1-98, 3 pls., 1902.

‡ 'Synopsis der Geophiliden,' *Zool. Jahrb., Abt. f. Syst.*, Vol. XVIII., pp. 155-302, 6 pls., 1903.

Dr. J. C. Nielsen has two papers in the same volume of the same periodical. One treats of the development of *Bombylius pumilus*, a fly parasitic in the nest of a bee—*Colletes daviesiana*. He shows that when the *Bombylius* is ready to issue the pupa bores through the earth, and does not follow the channel of the nest. The second article is on the life-history of the longicorn beetle, *Oberea linearis*. The female beetle, after the manner of our *Oncideres*, cuts off the twig of hazel just beyond where it has deposited an egg. It takes two years for the young to reach maturity.

About two years ago a French woman, Marie Pellechet, offered a prize for a work on the insects injurious to books and their bindings. The committee in charge of the prize awarded it to Constant V. Houlbert, and his essay has been published.* It is the most complete work yet written on the subject. He treats of 60 different species, and gives remedies or means of prevention as far as known. There is a bibliography of 94 numbers, from which the author has drawn for most of his facts. He finds that the worst insect enemies of books are the species of *Anobium* and allied genera, known to the French as 'Vrillettes.' The remedy chiefly advised is fumigation, based on American methods.

NATHAN BANKS.

THE EIGHTH INTERNATIONAL GEOGRAPHIC CONGRESS, WASHINGTON, 1904.

THE executive committee of the Seventh International Geographic Congress, held in Berlin in 1899, having voted to convoke its next session in Washington, the National Geographic Society, as the organization responsible for the management of the sessions in the United States, will welcome the eighth congress and its friends to the national capital of the United States in September, 1904.

Geographers and promoters of geography throughout the world, especially members of geographic societies and cognate institutions of scientific character, are cordially invited to assemble in Washington, D. C., on September 8, 1904, for the first international meeting of geographers in the western hemisphere.

* 'Les insectes ennemis des livres,' pp. 269 + 38, 3 pls., 59 figs., Paris, 1903.

On the invitation of the National Geographic Society, the following societies join in welcoming the congress and undertake to co-operate toward its success, especially in so far as sessions to be held in their respective cities are concerned:

The American Geographical Society.
The Geographic Society of Baltimore.
The Geographic Society of Chicago.
The Geographical Society of California.
The Mazamas.
The Peary Arctic Club.
The Geographical Society of Philadelphia.
The Appalachian Mountain Club.
The Geographical Society of the Pacific.
The Sierra Club.
The American Alpine Club.
The Harvard Travellers Club.

The congress will convene in Washington on Thursday, September 8, in the new home of the National Geographic Society, and will hold sessions on the ninth and tenth, the latter under the auspices of the Geographic Society of Baltimore. Leaving Washington on the twelfth, the members, associates and guests of the congress will be entertained during that day by the Geographical Society of Philadelphia, and on the thirteenth, fourteenth and fifteenth by the American Geographical Society of New York, where scientific sessions will be held; on the sixteenth they will have the opportunity of visiting Niagara Falls (*en route* westward by special train), and on the seventeenth will be entertained by the Geographic Society of Chicago; and on Monday and Tuesday, September 19 and 20, they will be invited to participate in the International Congress of Arts and Science connected with the World's Fair in St. Louis. Arrangements will be made here for visiting exhibits of geographic interest. In case any considerable number of members and associates so desire, a far-west excursion will be provided from St. Louis to the City of Mexico, thence to Santa Fé, thence to the Grand Canyon of the Colorado, and on to San Francisco and the Golden Gate, where the western geographic societies will extend special hospitality, afterward returning by any preferred route through the Rocky Mountains and the interior plains to the eastern ports.